Reinvent NASA Option

September 12, 2002

Reinvent NASA Option
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Reinvent NASA Option

End-State Description

The **Reinvent NASA Option** provides focus on STS/ISS Utilization Management through the creation of a new enterprise. This option provides greater advocacy and visibility to the Agency for the S/T/C user community and the public through offices having the responsibility for:

1. STS/ISS Payloads Office, which provides STS/ISS tactical manifesting and mission management functions
   - Customer Focus and Smart Integration Teams that buffer the researcher from the process and focus on the researcher as a customer
2. STS/ISS Commercial Utilization, which provides a single office responsible for managing the commercial customers of Shuttle and Station
3. STS/ISS Education and Outreach, which provides consolidation and focus as integrated archiving for STS/ISS research

Reinvent NASA Option
Rationale

- Address customer concerns with simplified interfaces with goals to
  - Integrate strategic and tactical planning for flight research across multiple vehicle platforms
  - Provide focused integration activity for ISS Research
  - Simplify existing processes through centralization
  - Provide an integrated voice for all researchers (S/T/C)
  - ‘One stop-shop’ encourages S/T/C and IP utilization of ISS/STS
  - Buffer researchers from the process
  - Centralize assessment of all platforms which could be used for research optimizes research opportunities
  - Prioritize flight and increment assignments based on Agency priorities
- Separation of science development from mission management with separate budgets empowers managers to perform to plan and is consistent with Freedom to Manage initiatives.

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End-state Functional Table

Function	Code Z Role	Remarks
0) Define, Develop and Implement Policy and Strategic Plans	Leads	For SSP/ ISS Utilization Management only
1) Management of Research Utilization		
a) Establish Research Plans	Supports	Led by Codes U, S, Y, R, M
b) Manage Research Programs	Supports	Led by Codes U, S, Y, R, M
c) Manage Integrated Research Utilization	Leads	For SSP/ ISS Utilization
2) Preparing and Allocating Budgets	Leads	For SSP/ ISS Utilization
a) Budget Formulation, Justification		
b) Budget Execution		
3) Selecting and Prioritizing Research	Leads	For Commercial Research only through CSCs
a) Managing selection process		
b) Selection		
c) Prioritizing selections		
4) Establishing Payload/ Experiment Requirements and Feasibility	Leads	For Program level multi-use hardware (EXPRE
a) Research Requirements		WORF, MELFI)
b) Engineering Concept Development & Hardware Assessments		
5) Developing Cost, Schedule, and Risk Assessments	Leads	For Program level multi-use hardware (EXPRE
a) Perform Cost, Schedule, Risk Management Assessment		WORF, MELFI)
b) Authority to Proceed		
6) Developing and Qualifying Flight Research Systems	Leads	For Program level multi-use hardware
a) DDT&E	Supports	For discipline specific and commercial hardwa
b) Subrack Integration		
c) Operations		
7) Maintaining and Sustaining Flight Research Systems	Leads	For all on-orbit laboratory facility racks (one yr after launch)
a) DDT&E		
b) Operations		
8. Developing Ground Systems	Leads	For integration and operations ground systems, and those associated with flight facility racks.

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End-state Functional Table

Function	Code Z Role	Remarks
9) Maintaining and Sustaining Ground Systems a) Identify changes/ upgrades to Research Flight Systems b) Maintain & Sustain Research Ground Systems	Leads	For integration and operations ground systems, and those associated with flight facility racks.
10. Constructing Ground Facilities	Support	Led by responsible Center
11. Maintaining Ground Facilities	Support	Led by responsible Center
12) Certifying Safety of Research Flight and Ground Systems	Leads	For integrated SSP/ ISS Utilization
13) Managing Missions and Allocating Services a) Advocacy, Manifesting and Resource Allocations b) ISS Research Mission Management	Leads	For integrated SSP/ ISS Utilization
14) Integrating User Mission – Analytical a) Payload Engineering Integration b) Payload Software Integration and Flight Production	Leads	For integrated SSP/ ISS Utilization Includes integrated Lab for payloads and rack to ISS analyses.
15. Integrating User Missions - Physical	Leads	For integrated SSP/ ISS Utilization
16) Integrating User Missions - Operational a) Payload Training b) Operations Integration	Leads	For integrated SSP/ ISS Utilization
17) Conducting Research & Analysis and Disseminating Results	Support	Through Customer Support/ Focus Integration Teams
18. Educating and Reaching Out to the Public (including industry) a) Management and Control b) Disseminate, Communicate & Report results to ISS customers	Leads	For integrated SSP/ ISS Utilization
19. Recommending ISS Pre-Planned Product Improvements	Leads	For integrated SSP/ ISS Utilization
20. Managing Archival of Research Samples, Data, and Results	Leads	For integrated SSP/ ISS Utilization

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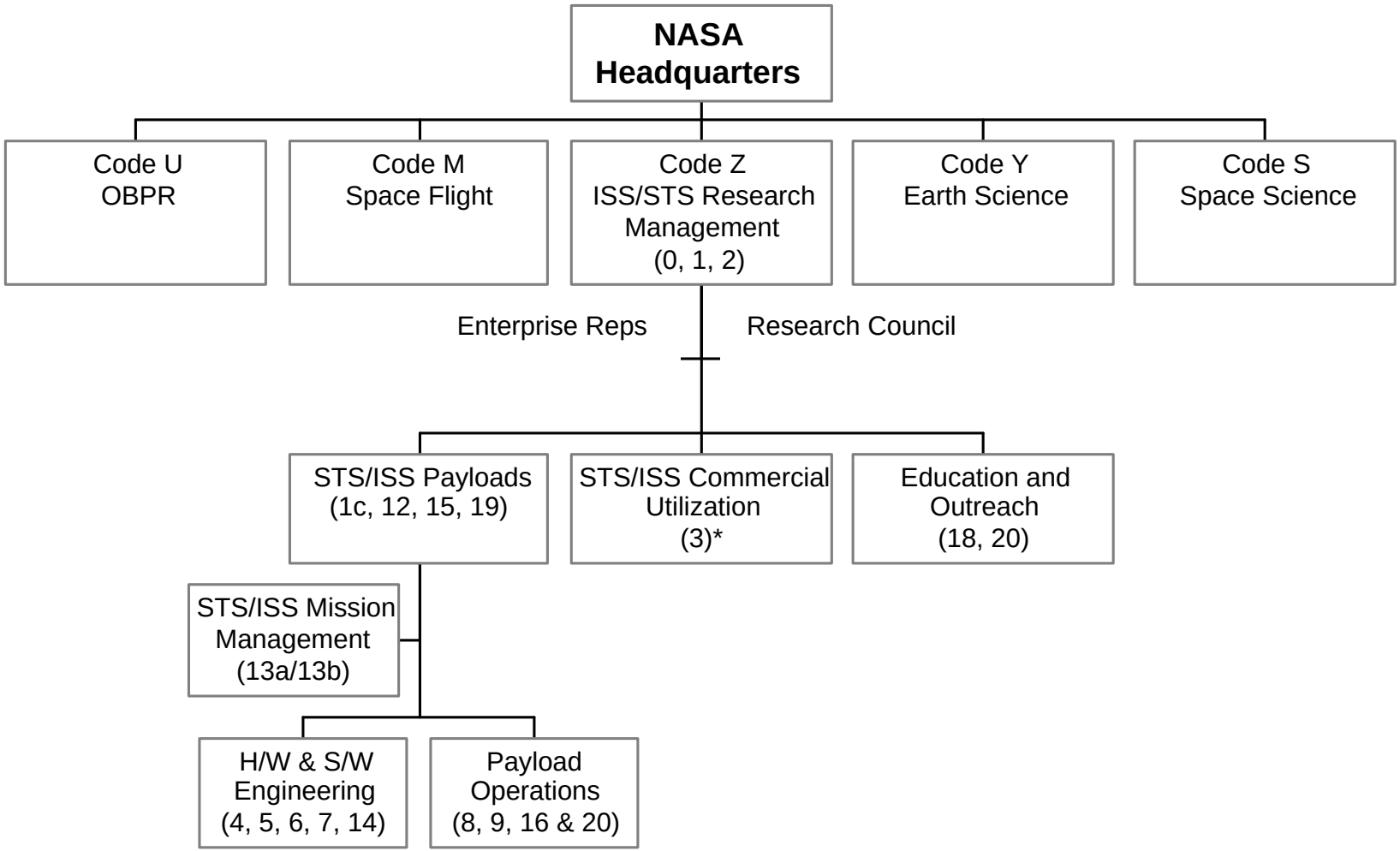
Management Structure and Interfaces



* For Commercial Payloads only

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Management Structure and Interfaces

- Three Division Level Offices would be created under Code Z
  1. STS/ISS Payloads Office
     - Perform the Integrated Research Utilization Management Function
     - Responsible for the STS/ISS Tactical manifesting and mission management functions
     - Perform the Analytical Engineering and Operations functions
     - Integrate Pre-Planned Product Improvement inputs to optimize ISS capabilities with research requirements
  2. STS/ISS Commercial Utilization
     - Provide a single office responsible for managing the commercial customers of Shuttle and Station
     - Have this activity within Code Z to better position the agency to meet the fast turn around times required by commercial customers
  3. STS/ISS Education and Outreach (support NASA Education Enterprise)
     - Consolidated Outreach under Code Z will provide the required focus
     - This Office will also provide STS/ISS integrated archiving responsibility

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Key Aspects

- Responsible for Utilization Management of STS, ISS Flights
- Elevates Research Utilization to Enterprise level
  - Provides greater advocacy and visibility to Agency (and public) of relevance of STS/ISS Utilization Management
  - Science Enterprise (OBPR) efforts are not diluted from science focus
- Codes U, S, Y, M, and R are customers to new Enterprise
- Strategic utilization planning and funding of implementation are independent of both the science and vehicle programs
- Provides single POC for STS/ISS research community: Science, Commercial, Technology, IPs, other Agencies
- Chairs the SSUB and has authority over cross Enterprise ISS and STS research utilization decisions
- Accommodates International Barter agreements and allocation of resources

Reinvent NASA Option
Key Aspects

- Establish STS/ISS Research Council comprised of rotating IPAs from science community
  - Provide intellectual leadership
  - Provide resources to facilitate dissemination of research results and benefits of STS/ISS
  - Gain support of Scientific user groups external to NASA
  - Reports to NAC and is a non-NASA advisory committee
  - Chief Research Officer is a member of the Senior Management Council

Reinvent NASA Option
Key Aspects

- Code Z becomes responsible for sustaining and maintaining the ISS as an on-orbit laboratory including the facilities (EXPRESS, HHR, FCF, etc)
  - Immediate transition of EXPRESS, EXPRESS derivatives and multi-use racks and pallets to Code Z
  - Transition other discipline specific facility racks one year after launch
  - Provide consistent integration approach for all Facilities
  - Optimize use of facilities across research disciplines
  - Gain efficiencies in engineering personnel, integrated logistics and sparing

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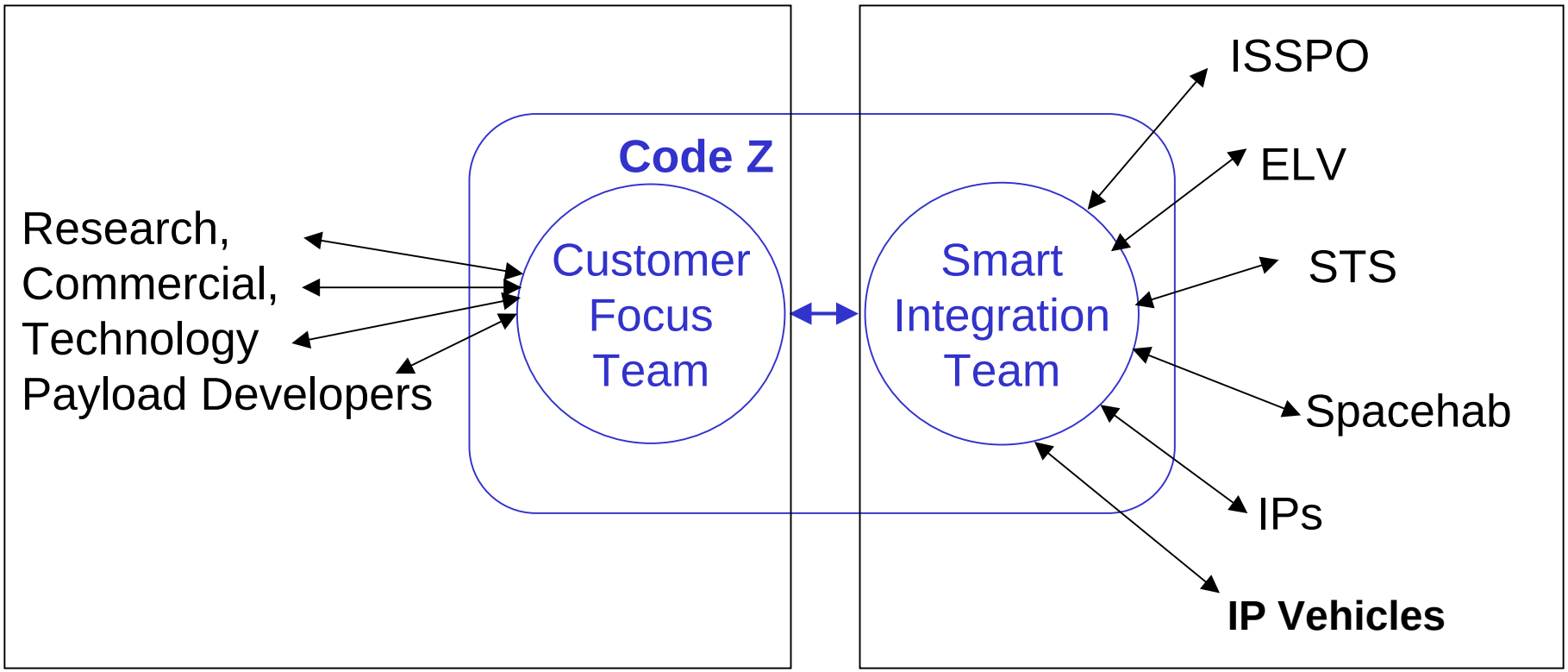
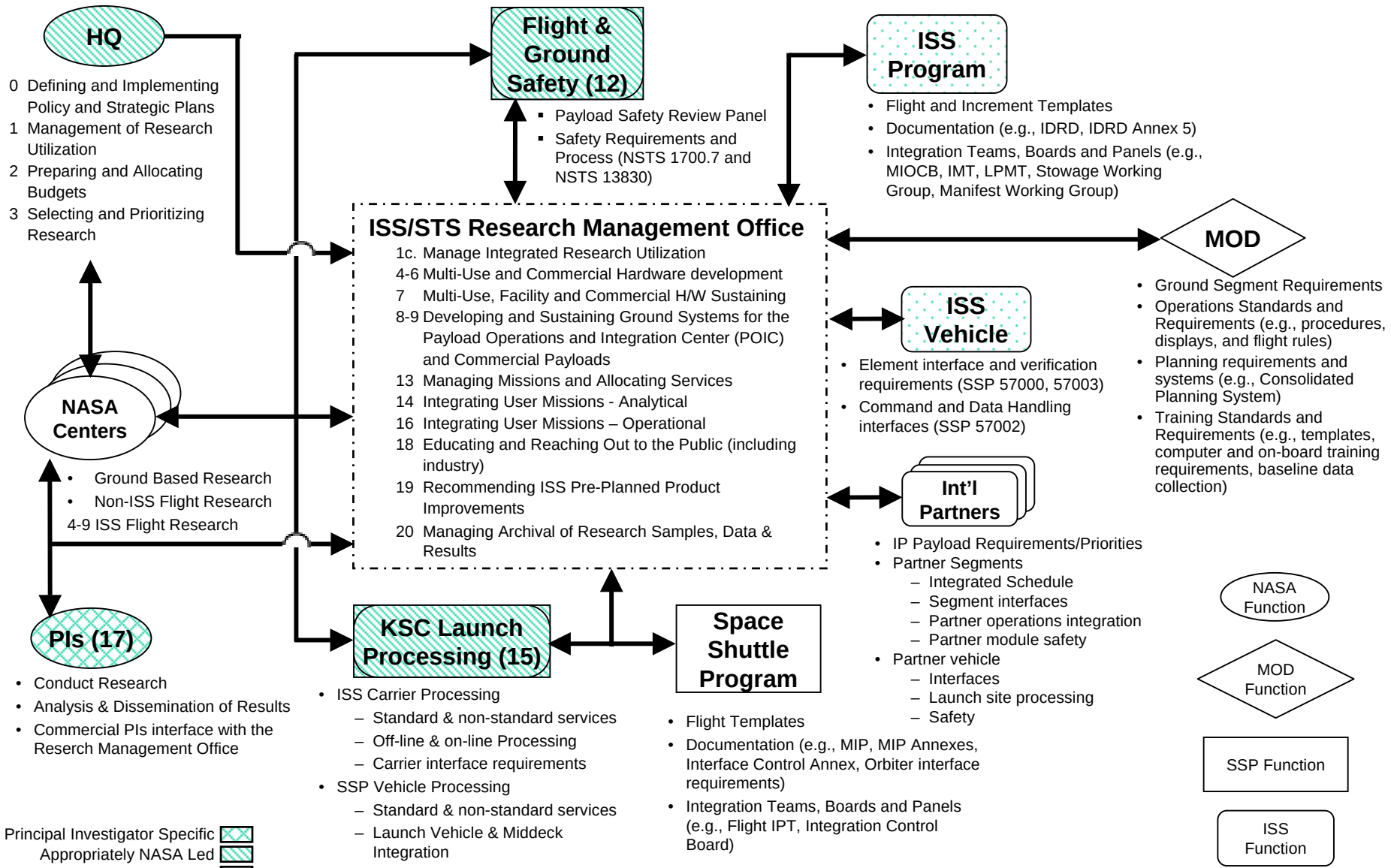
Key Aspects

Customer Focus



NASA Re-invent Interfaces



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Other Considerations

- Standardize the science selection process across the NASA Codes
  - NASA Research Announcements (NRAs) are not part of end-to-end cycle time
    - These are ground studies or new research with no commitment to a flight opportunity
  - Announcement of Opportunities (AOs) follow a two step process focused on available resources and capabilities:
    - Step 1. Based on Peer reviewed science and Programmatic viability (Phase A)
    - Step 2. Full cost, technical, schedule proposal for Phase B/C/D award
      - Documented science requirements
      - One year Phase B followed with Mission Confirmation Review and Authority to Proceed to Phase C,D
      - Maturity of science assured

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Goals Assessment

- Provide Utilization Management that is integrated across ISS and SS Programs, International and Domestic agencies
  - Include short duration and long duration (e.g, ISS and STS)
  - Include various platforms/facilities
  - Ensure flight and increment assignments are based on Agency priorities and are aligned with research community
  - Optimize research opportunities on available platforms
  - Integrate strategic and tactical planning for flight research
- Responsive to the research community
  - Provide integrated voice for research community through the Research Council
  - Provide customer focus through Customer Focus and Smart Integration Teams
  - Simplify existing processes and interfaces for efficiency and consistency
  - Standardize documentation and requirements templates
  - Standardize research selection process, achieve consistency in time from selection to flight

Reinvent NASA Option
Personnel and Staffing

- The workforce under the Reinvent NASA Option includes existing civil servants and support contractors.
- Personnel numbers increase in the first 2 years to staff the new Enterprise, then decline to zero following consolidation of activities.

Temporary increase in workforce is estimated as follows:

	FY03	FY04	FY05	FY06	FY07
Civil Servants	5	5	0	0	0
Contractors	5	5	0	0	0
Total	10	10	0	0	0

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Competencies

- This Option retains Agency competencies in research and utilization management and builds upon current capabilities and processes.

Reinvent NASA Option
Budget Assessment

- Budgets will need to be re-aligned between organizations subject to delineation of responsibilities. Costs associated with identified personnel needs:

Fiscal Year	FY03	FY04	FY05	FY06	FY07
$M	1.5	1.5	0	0	0

- Efficiencies gained through consolidation of ISS/STS flight research activities have not been evaluated

Reinvent NASA Option
Distinguishing Strengths

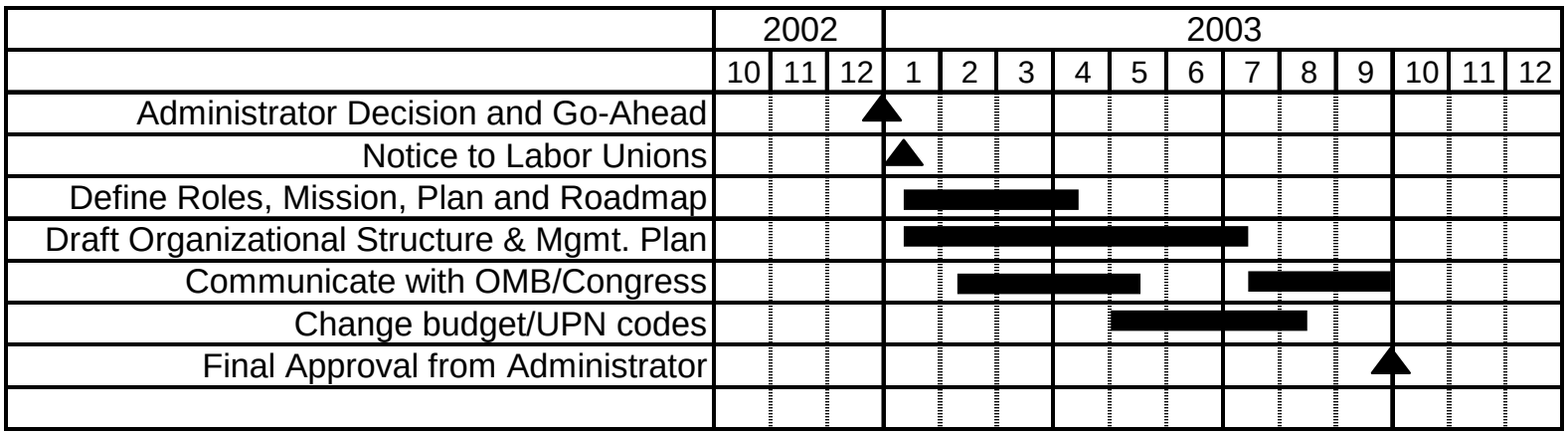
- Ease and timeliness of implementation
- Low cost
- Integrated ISS/STS flight research utilization strategy across NASA and other government agencies
- Customer focus with Smart Integration team responding to customer needs
- Current human capital strengths and experience within NASA utilized
- STS/ISS Research Council comprised of rotating IPAs provides external science community focus

Reinvent NASA Option
Distinguishing Weaknesses

- Perception as status quo
- Perceived or real difficulty in reorganizing NASA
- Lack of direct jurisdiction by research codes over research flown on each and every increment
- Does not make civil servants available for other Agency initiatives

Reinvent NASA Option
Transition Strategy / Path to Implementation

Schedule/timeframe is at discretion of NASA Administrator

- Has potential to be transitioned quicker than other Options
- Implementation can be completed in one year with minimum impact and overlap

Reinvention Milestone Schedule